ESRC Emergent Environmentalism Project - Award Ref. R00234432

Emergent Environmentalism - Children

User Guide

The purpose of this study was to find out about the knowledge children, aged four and six years old, have about environmental issues   This is the main stage of an on-going project based in Durham and followed procedures developed in pilot studies   Four groups of about 120 children were interviewed individually, using a series of photographs with key questions to promote discussion   These probed the children's understanding (accurate, partial and inaccurate) of the places and issues presented to them, their awareness of environmental issues and provided some indication of the sources of their knowledge   Two researchers did all the interviewing, one in North East England and one in California   There was one group of four-year-olds and one group of six-year-olds in each region

The topics chosen for discussion were the tropical rain forests (including deforestation and biodiversity issues), polar lands (including reference to warming of the climate) and waste management   The children were also asked about the sources of their knowledge   The details of the structure of the interviews, the method of analysis and the categories of responses are included in the accompanying Codebook

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Emergent Environmentalism - Adult

User Guide

The purpose of the study was to highlight the kinds of life experiences that produce adults who are informed about and actively promote environmentally positive behaviour. Following the work of Tanner, a questionnaire was devised and mailed to the membership of the National Association for Environmental Education (NAEE) in the United Kingdom.

They were asked to provide their approximate age, gender, details of their demonstration of practical concern for the environment, and an autobiographical statement identifying those experiences that led to this concern. The participants were also asked to state what they considered to be their most significant life experiences and to write a statement indicating which, if any, of the years of their lives were particularly memorable in the development of positive attitudes toward the environment. As the form only gave the aims and purposes of the research the participants were able to provide completely original responses unbiased by any examples.

A preliminary study of the material was carried out and a report published in 1993. A second more detailed analysis was made in 1994. The responses were studied, the influences mentioned categorised, recorded and entered into a database, which is lodged with the ESRC data archive. The accompanying Codebook gives details of the questionnaire and the categories used in this analysis.

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Emergent Environmentalism - Adult

Codebook

There is one database with adult data

"ADULT.TXT" = Information from questionnaire - 233 records

A questionnaire was sent to members of the National Association for Environmental Education and 233 replies received. These were analysed and the results entered into a database. The form of the questionnaire is given first, then the data definitions.

Questionnaire

See next page for questionnaire

RESPONSE SHEET 1
DEVELOPMENT OF CONCERN FOR THE ENVIRONMENT

Autobiographical Statement
. . . of life experiences and formative influences which have contributed to a present
concern for the environment and interest in Environmental Education. Please indicate
if you think there is a single most important influence amongst them.

Please turn over or continue on a separate sheet if necessary

RESPONSE SHEET 2
DEVELOPMENT OF CONCERN FOR THE ENVIRONMENT

Practical Activities

Please tick if you are <u>regularly</u> involved in any of the following.

Practical conservation (tree planting, wildlife, gardening etc.)

Recycling activities (use of bottle banks, plastic recycling etc.)

Attending public meeting/member of organisation actively involved in environmental matters (e.g. animal rights, nuclear issues)

Curriculum development in environmental education

Outdoor enjoyment activities (bird watching, hill-walking etc.)

Making a conscious and regular effort to buy 'environmentally friendly' household goods/lead free petrol

Reading books and articles on environmental issues

Life Stages

Please write a brief statement indicating which (if any) of the years of your life were particularly significant in terms of developing positive attitudes towards the environment. Are these linked to influences described in the autobiographical statement?

Finally, please would you indicate your sex and very approximate age.

Please tick:

Male	Under 30
Female	30-50
	Over 50

Your co-operation is very much appreciated.

Data definitions

Each record has 52 fields. The field roster is given below

Field number	Field Name	Type	Length
1	Number	N	
2	Age	N	
3	Sex	A	5
4	Childn	N	
5	Childp	N	
6	Teenout	N	
7	Adulto	N	
8	Adultn	N	
9	Adultgah	N	
10	P	N	
11	Sa	N	
12	Sp	N	
13	Ta	N	
14	Tr	N	
15	Work	N	
16	Travely	N	
17	Travela	N	
18	Orgy	N	
19	Organ	N	
20	Orgag	N	
21	Religion	N	
22	Other	N	
23	Ntown	N	
24	Npol	N	
25	Nhealth	N	
26	Nother	N	
27	Pfamily	N	
28	Polder	N	
29	Pfriends	N	
30	Pchildren	N	
31	Pnegative	N	
32	TVn	N	
33	Pbooks	N	
34	TVd	N	
35	Nbooks	N	
36	Disaster	N	
37	Rnone	N	
38	R1	A	5
39	R2	A	5
40	R3	A	5
41	Lchild	N	
42	Lteen	N	
43	L2	N	
44	L3	N	
45	L4	N	
46	A1	N	
47	A2	N	
48	A3	N	
49	A4	N	
50	A5	N	
51	A6	N	
52	A7	N	

Notes (on fields and codes used)

Record details
1   Number = Identifying number for each record
2   Age = Age of respondent in three bands
               Key   1 Under 30 years
                         2 30-50 years
                         3 Over 50 years
3   Sex = Sex of respondent
               Key   M=Male
                       F=Female

In the fields 4-37 and 41-52, which are numeric, an entry of 1 means the class was mentioned. The abbreviations used in 38-40 (R1-3) are given in brackets after the name of each field.

Questionnaire

Life history
4   Childn (Cn) = Childhood enjoyment of nature
5   Childp (Cp) = Childhood practical outdoor activities
6   Teenout (To)= Experience of outdoor in 'teens
7   Adulto (Ao) = Adult experience of outdoors
8   Adultn (An) = Adult experience of nature
9   Adultgah (Ag) = Adult - gardening, agriculture, horticulture
10   P = Primary education
11   Sa = Secondary academic education
12   Sp = Secondary practical education(eg field work)
13   Ta = Tertiary academic education
14   Tr = Tertiary research
15   Work (W)
16   Travely (Ty) = Travel in youth
17   Travela (Trav) = Travel as adult
18   Orgy (Oy) = Youth organisations
19   Organ (On) = Adult nature organisations
20   Orgag (Og) = General adult organisations (eg Greenpeace)
21   Religion (R)= Religious beliefs
22   Other (O) = Other positive factors
23   Ntown (Nt) = Negative effects of urban areas
24   Npol (Np) = Pollution
25   Nhealth (Nh) = Detrimental effects on health
26   Nother (No) = Other negative factors
27   Pfamily (Pf) = Close family
28   Polder (Po) = Older friends
29   Pfriends (Pfr) = Friends, spouses
30   Pchildren (Pc) = Having children
31   Pnegative   (Pn) = Negative effect of people
32   TVn (Tn) = TV nature programs
33   Pbooks (Pb) = Books about nature
34   TVd (Td) = TV documentaries
35   Nbooks (Nb) = Books, magazines, papers about environmental problems
36   Disaster (D) = Disasters

Ranked factors
37   Rnone = Could not rank influences
38   R1 = Factor ranked first (codes as given for fields 4-36)
39   R2 = Factor ranked second (codes as given for fields 4-36)
40   R3 = Factor ranked third (codes as given for fields 4-36)

Important life stages
41   Lchild = Childhood
42   Lteen = 'Teens
43   L2 = 20's
44   L3 = 30's
45   L4 = over 40

Activities
46   A1 = Practical conservation
47   A2 = Recycling
48   A3 = Organizations/public meetings
49   A4 = Curriculum development
50   A5 = Outdoor activities
51   A6 = Environmentally friendly shopping
52   A7 = Reading books/articles

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Emergent Environmentalism - Children

Codebook

There are four sets of data, all with the same structure

1 "DFOUR" = Durham four-year-olds - 137 records
2 "CFOUR" = Californian four-year-olds - 120 records
3 "DSIX" = Durham six-year-olds - 138 records
4 "CSIX" = Californian six-year-olds - 122 records

The children were interviewed individually The transcripts were analysed and the results entered into the data base The outline of the interview is given first, then the data definitions

Outline of interview

Now   (child's name) I'd like to show you some pictures of interesting places

Rain forest
Picture 1   Show picture
What can you see here?
What is a place like this with lots of trees close together called?
State "It is a tropical rain forest"
What would it feel like in the forest? (Would it be hot or cold, wet or dry)
Where do you think this might be? (do you know the name of a place or country where there might be a rain forest?)
Do you think anything could live here? (any animals, birds, people)

Picture 2   Show picture
What is this?

Picture 3   Show picture
What is this?
How do you know so much about the tropical rain forest?

Deforestation/endangered species

State "People sometimes cut down trees in the forest"
Why do you think they do this?
Can you think of any other reason?
State "Sometimes a lot of the trees or even all the trees in the forest are cut down "
Is that a good idea or a bad idea?
Why? (whether good or bad)
What would happen to the monkey and parrot if all the trees were cut down?
How do you know so much?

Now let's look at a completely different place

Polar environment

Picture 4   Show picture
What can you see here?
What would it feel like there?
State (if necessary) "it is cold"
Where might this be? (do you know the name of a place or country where it might be like this?)
Do you think anything lives here? (any animals, birds, people)

Picture 5   Show picture
What is this? (do you know its name?)

Picture 6   Show picture
What is this? (do you know its name?)
How do you know so much?

Polar warming

What would happen to the snow and ice if it became much warmer, even hot in this place?

[Probe the children's understanding e g

If they say the snow goes away, ask where does it go?
If they say it melts, ask what happens to snow when it melts?
If they are silent, ask does it change or does it go away or does it stay the same?
If they say it changes into water, ask what happens to the water? and so on
It is useful to ask about the snow and ice separately, as some children think that snow changes into ice, then changes into water]

How do you know this?
What would happen to the polar bears and the penguins if it became hot and   (recap the child's explanation e g the snow and ice went away or the snow and ice melt)?

How do you know so much about polar regions?

Now let's look at something completely different

Pollution/rubbish/trash

<u>Picture 7</u>   Show picture
             What can you see here?
             What should we do with litter/rubbish/trash?
             Why?
             What happens to the rubbish after it has been put in the bin?
             Does all rubbish go into the same bin?
             Can we do anything different with things like bottles, cans and old
             newspapers?

     [If the children have any idea of recycling, probe this e g
     What happens to the bottles?
     Can they be recycled if they are broken?
     How is it done?
     Similarly with cans, paper etc]

             Can any of the rubbish be used again?
             What does "recycle" mean?
             How do you know so much about rubbish?

Data definitions

There are 35 fields in each record   The field roster is as follows

Field number	Field Name	Type	Length
1	Number	N	
2	Sex	A	5
3	Age	N	
4	School	A	5
5	R-observe	A	8
6	R-name	A	8
7	R-feel	A	8
8	R-place	A	8
9	R-inhabitants	A	8
10	Monkey	A	8
11	Parrot	A	8
12	R-source	A	8
13	D-reason1	A	8
14	D-gb	A	8
15	D-reason2	A	8
16	D-effects	A	8
17	D-source	A	8
18	P-observe	A	8
19	P-feel	A	8
20	P-place	A	8
21	P-inhabitants	A	8
22	Polar bear	A	8
23	Penguin	A	8
24	P-source1	A	8
25	P-warming	A	8
26	P-effects	A	8
27	P-source2	A	8
28	L-observation	A	8
29	L-where	A	8
30	L-why	A	8
31	L-treatment	A	8
32	L-samebin	A	8
33	L-things	A	8
34	L-recycle	A	8
35	L-source	A	8

Notes (referring to each field)

Record details
1   Number = Identifying number for each record
2   Sex = Sex of child
                Key   M = Male   F = Female
3   Age = age in months after 4th (or 6th) birthday
                Key   Number between 0 - 11
4   School Initials to identify school

<u>Interview</u>

Rainforest

5   R-observe = Observations of picture of rainforest
      Show picture 1 Question "What can you see here?"
             Key   1 trees, branches, leaves (correct)
                     2 monsters (fanciful)
                     d don't know/no response
                     n not asked

6   R-name = Name of a place with many trees
      Question "What is a place like this with lots of trees close together called?"
             Key   1 rain forest, jungle
                     2 forest, wood
                     3 incorrect e g field
                     d don't know/no response
                     n not asked

7   R-feel = Feel of rain forest
      Question "What would it feel like in the forest? (Would it be hot or cold, wet or dry)"
             Key   1 hot, wet, dark
                   1/2 cold, wet (for 6-year-olds)
                     2 cold, dry
                     3 hard, soft, nice
                     4 scary, dangerous
                     d don't know/no response
                     n not asked

8   R-place = Place where rain forest might be found
      Question = "Where do you think this might be? (do you know the name of a place or country where there might be a rain forest?)"
             Key   1 Africa, South America
                     2 local woods e g Hamsterley forest
                     3 incorrect e g Newcastle
                     4 long way away
                     d don't know/no response
                     n not asked

9   R-inhabitants = Inhabitants of rain forest
      Question "Do you think anything could live here? (any animals, birds, people)"
             Key   1 monkey, snakes, toucans
                     2 lions, tigers, elephants (savannah)
                     3 squirrels, bats, mice, owls, bears, raccoons
                     4 people [a) tribes people (correct) b) people like us
                                      c) tarzan (fanciful)]
                     5 sheep, cows, animals
                     6 monsters, dinosaurs, gnomes
                     7 none
                     d don't know/no response
                     n not asked

10   Monkey = Identification of monkey
      Show picture 2 Question "What is this?"
             Key   1 monkey, chimp
                     2 chipmunk, koala bear
                     3 animal, dog
                     d don't know/no response
                     n not asked

11   Parrot = Identification of parrot
Show picture 3 Question "What is this?"
          Key   1 parrot, macaw
                2 toucan
                3 flamingo, bird
                d don't know/no response
                n not asked

12   R-source = Source of knowledge about rain forest
Question "How do you know so much about the tropical rain forest?"
          Key   1 parents, family
                2 TV/Video/computer
                3 books
                4 zoo/holiday/pet shop
                5 school
                6 other
                7 "I just know"
                d don't know/no response
                n not asked

Deforestation/endangered species

13   D-reason1 = Reason for cutting down trees
[Interviewer states "People sometimes cut down trees in the forest"]
Question "Why do you think they do this? (Can you think of any other reason?)"
          Key   1 nature of trees e g too long
                2 people's needs e g to put on the fire
                2p making paper (6-year-olds)
                3 incorrect e g 'cos men have an axe
                4 other
                d don't know/no response
                n not asked

14   D-gb   = Good or bad idea
[Interviewer states "Sometimes a lot of the trees or even all the trees in the forest are cut down "]
Question "Is that a good idea or a bad idea?"
          Key   1 good
                2 bad
                d don't know/no response
                n not asked

15   D-reason2 = reasons for good or bad idea
      Question "Why? (whether good or bad)"
          Key   1 effect on trees
                1a reasonable effect on trees
                1b dubious effect on trees
                2 effect on animals/birds
                2a reasonable effect on animals/birds
                2b dubious effect on animals/birds
                2c incorrect effect on animals/birds
                3 effect on environment
                3a reasonable effect on environment
                3b dubious effect on environment
                3o effect on oxygen
                4 results for people
                4a reasonable results for people
                4b dubious results for people
                4c incorrect results for people
                5 "'cos it is"
                6 other
                d don't know/no response
                n not asked

16   D-effects = Effects of deforestation
      Question "What would happen to the monkey and parrot if all the trees were cut down?"
          Key   1 fall down/hurt themselves (immediate)
                2 won't have any homes/won't be able to climb/get lost/won't like it
                3 will live on ground (6 for 6-year-olds)
                4 they will die/they can't live (3 for 6-year-olds)
                5 go somewhere else (4 for 6-year-olds)
                6 they will have no food/homes and die (causal link) (5 for 6-year-olds)
                7 other
                d don't know/no response
                n not asked

17   D-source = Source of knowledge about deforestation
Question "How do you know so much?"
          Key   1 parents, family
                2 TV/Video/computer
                3 books
                4 travel/holiday
                5 school
                6 other
                7 "I just know"
                d don't know/no response
                n not asked

18 P-observe = Observation of picture of polar lands
  Show picture 4 Question "What can you see here?"
    Key 1 snow, ice, mountains, water
       2 monsters
       d don't know/no response
       n not asked

19 P-feel = Feel of polar area
  Question "What would it feel like there?"
    Key 1 cold, freezing, slippy
       2 hot
       3 nasty, dangerous
       d don't know/no response
       n not asked

20 P-place = Polar place
  Question "Where might this be? (do you know the name of a place or country
  where it might be like this?) "
    Key 1 North pole, Iceland, Alaska
       1a North Pole (one polar area) (for 6-year-olds)
       1b Arctic, Antarctic (two polar areas) (for 6-year-olds)
       1c Switzerland (possible country) (for 6-year-olds)
       2 in the mountains, in winter, Santa's place, Lake Tahoe
       3 Newcastle, Scotland
       4 long way away
       d don't know/no response
       n not asked

21 P-inhabitants = inhabitants of polar areas
  Question "Do you think anything lives here? (any animals, birds, people)"
    Key 1 polar bear
       2 bears, wolves
       3 fish, whales, dolphins, seals
       4 people [a) Eskimos b) like us]
       5 Santa Claus
       6 lions, parrots
       7 none
       d don't know/no response
       n not asked

22 Polar bear = identification of polar bear
  Show picture 5 Question "What is this? (do you know its name?)"
    Key 1 polar bear
       2 bear, teddy bear, panda bear
       3 white animal
       d don't know/no response
       n not asked

23   Penguin = identification of penguin
Show picture 6 Question "What is this? (do you know its name?)"
          Key   1 penguin
                    2 pingu
                    3 bird
                    d don't know/no response
                    n not asked

24   P-source1 = sources of knowledge about polar areas
Question "How do you know so much?"
          Key   1 parents, family
                    2 TV/Video/computer
                    3 books
                    4 zoo/holiday
                    5 school
                    6 other
                    7 "I just know"
                    d don't know/no response
                    n not asked

Polar warming

25   P-warming = Polar warming
Question "What would happen to the snow and ice if it became much warmer,
even hot in this place?"
          Key   1 "melt" meaning change to water
                    2 "melt" meaning something else
                    3 change to grass/ground
                    4 go away up to the sky/to the clouds
                    5 go somewhere else e g in water /disappear
                    6 it gets warm, it doesn't change (incorrect)
                    7 change e g colour
                    8 other e g fall down, cracks
                 (9 snow changes to ice for 6-year-olds)
                    d don't know/no response
                    n not asked

26   P-effects = Effect of polar warming
Question "What would happen to the polar bears and the penguins if it became
hot and   (recap the child's explanation e g the snow and ice went away or
the snow and ice melt)?"
          Key   1 fall in the water/walk on ground (immediate)
                    2 won't have any homes/nowhere to live/won't like it
                    3 will live in caves, will get hot (6 for 6-year-olds)
                    4 they will die (3 for 6-year-olds)
                    5 go somewhere else (4 for 6-year-olds)
                    6 they will have no food and die (causal link) (5 for 6-year-
                        olds)
                    7 other
                    d don't know/no response
                    n not asked

27   P-source2 = Sources of knowledge about polar regions
          Question "How do you know so much about polar regions?"
               Key   1 parents, family
                      2 TV/Video/computei
                      3 books
                      4 travel/holiday/zoo/personal experience
                      5 school
                      6 other
                      7 "I just know"
                      d don't know/no response
                      n not asked

Pollution/rubbish/trash

28   L-observation = Observation of picture
          Show picture 7 Question "What can you see here?"
               Key   1 litter, rubbish, trash, paper, trees, car (correct)
                      2 incorrect
                      d don't know/no response
                      n not asked

29   L-where = Proper place for litter
          Question "What should we do with litter/rubbish/trash?"
               Key   1 in the bin/garbage/trash can
                      2 other
                      d don't know/no response
                      n not asked

30   L-why = Reason for putting litter in bin
          Question "Why?"
               Key   1 animals/people might get hurt
                      2 it spoils the place / it looks horrid
                      3 rule e g because "you will get wrong"
                      d don't know/no response
                      n not asked

31   L-treatment = Treatment of rubbish
          Question "What happens to the rubbish after it has been put in the bin?"
               Key   1 bin/garbage-men
                      2 bin/garbage-lorry
                      3 tip/dump
                      4 other
                      d don't know/no response
                      n not asked

32   L-samebin = Is all rubbish the same
          Question "Does all rubbish go into the same bin?
               Key   1 no, recycled
                      2 no, but not sure why
                      3 all in same bin
                      d don't know/no response
                      n not asked

33   L-things = Things which can be recycled
Question "Can some things be used again?"
Key   1 all rubbish
2 bottles
3 cans
4 newspapers
5 others
6 incorrect e g food
7 nothing
d don't know/no response
n not asked

34   L-recycle = Meaning of recycle
Question "What does "recycle" mean?"
Key   1 used again through changing form (correct)
2 used again - broken/torn just stuck together
3 used again in same form
4 'made new again'
5 thrown away
6 other
d don't know/no response
n not asked

35   L-source = Sources of knowledge about rubbish
Question "How do you know so much about rubbish?"
Key   1 parents, family
2 TV/Video/computer
3 books
4 observation e g I've seen it
5 school
6 other
7 "I just know"
d don't know/no response
n not asked

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Notes for machine readable data

There are five data bases, all in Paradox (Borland) [Windows version] All can be viewed as tables or through forms

A Adult data
"ADULT" = 233 records
B Children's data
1 "FOUR" = 137 Durham four-year-olds
2 "CFOUR" = 120 Californian four-year-olds
3 "DSIX" = 138 Durham six-year-olds
4 "CSIX" = 122 Californian six-year-olds

A Comments on Adult data
The fields within the box (on the form) come from the autobiographical accounts A brief explanation is given below The "Total" is merely a check on accurate data entry
Fields
Age is divided into three groups
1= <30 years
2= 30-50 years
3= >50 years
Outdoor
Childn= childhood enjoyment of nature
Childp= childhood practical activities
Teenout= Experience of outdoor in 'teens
Adulto= Adult experience of outdoors
Adultn= Adult experience of nature
Adultgah= Adult – gardening, agriculture, horticulture
Education
P= Primary
Sa= secondary academic
Sp= secondary practical (eg field work)
Ta= tertiary academic
Tr= tertiary research
Work
Travely= travel in youth
Travela= travel as adult
Orgy= youth organisations
Organ= adult nature organisations
Orgag= general adult organisations (eg Greenpeace)
Negative
Ntown= negative effects of urban areas
Npol= pollution
Nhealth= detrimental effects on health
Nother= other negative factors
Media
TVn= TV nature programs
Pbooks= books on nature
TVdoc= TV documentaries
Nbooks= books/magazines about environmental problems
Disasters

Activities
1= Practical conservation
2= Recycling
3= Organizations/public meetings
4= Curriculum development
5= Outdoor activities
6= Environmentally friendly shopping
7= Reading books/articles

Categories (of factors)
        1= Outdoor
        2= Education/courses
        3= Parents/close friends
        4= Organisations
        5= TV/Media
        6= Friends/other individuals
        7= Travel abroad
        8= Disasters/negative issues
        9= Books
        10= Becoming a parent
        11= Keeping pets/animals
        12= Religion/God
        13= Others

B Comments on children's data
The classification for the four-year-old and the six-year-old data are almost the same (the only differences are in
        Effects of deforestation
        Effects of polar warming
        Meaning of "melt")
The age does not include the years only the months (all FOUR and CFOUR are 4-years old plus some months, similarly for the six-year-olds)

Rain forest

Observations	1	trees, branches, leaves (correct)
	2	monsters (fanciful)
	d	don't know/no response
	n	not asked
Name	1	rain forest, jungle
	2	forest, wood
	3	incorrect e g field
	d	don't know/no response
	n	not asked
Feel	1	hot, wet, dark
	2	cold, dry
	3	hard, soft, nice
	4	scary, dangerous
	d	don't know/no response
	n	not asked
Place	1	Africa, South America
	2	local woods e g Hamsterley forest
	3	incorrect e g Newcastle
	4	long way away
	d	don't know/no response
	n	not asked
Inhabitants	1	monkey, snakes, toucans
	2	lions, tigers, elephants (savannah)
	3	squirrels, bats, mice, owls, bears, raccoons
	4	people [a) tribes people (correct) b) people like us c) tarzan (fanciful)]
	5	sheep, cows, animals
	6	monsters, dinosaurs, gnomes
	7	none
	d	don't know/no response
	n	not asked
Monkey	1	monkey, chimp
	2	chipmunk, koala bear
	3	animal, dog
	d	don't know/no response
	n	not asked

2

Parrot	1	parrot, macaw
	2	toucan
	3	flamingo, bird
	d	don't know/no response
	n	not asked
Knowledge source	1	parents, family
	2	TV/Video/computer
	3	books
	4	zoo/holiday/pet shop
	5	school
	6	other
	7	"I just know"
	d	don't know/no response
	n	not asked

Deforestation

Reasons	1	nature of trees e g too long
	2	people's needs e g to put on the fire
	3	incorrect e g 'cos men have an axe
	4	other
	d	don't know/no response
	n	not asked
Good/bad	1	good
	2	bad
	d	don't know/no response
	n	not asked
Why	1	effect on trees
	2	effect on animals/birds
	3	effect on environment
	4	results for people
	5	"'cos it is"
	6	other
	d	don't know/no response
	n	not asked
Effects	1	fall down/hurt themselves (immediate)
	2	won't have any homes/won't be able to climb/get lost/won't like it
	3	will live on ground (6 for 6-year-olds)
	4	they will die/they can't live (3 for 6-year-olds)
	5	go somewhere else (4 for 6-year-olds)
	6	they will have no food/homes and die (causal link) (5 for 6-year-olds)
	7	other
	d	don't know/no response
	n	not asked
Knowledge source	1	parents, family
	2	TV/Video/computer
	3	books
	4	travel/holiday
	5	school
	6	other
	7	"I just know"
	d	don't know/no response
	n	not asked

Polar environment

Observations	1	snow, ice, mountains, water
	2	monsters
	d	don't know/no response
	n	not asked
Feel	1	cold, freezing, slippy
	2	hot

	3	nasty, dangerous
	d	don't know/no response
	n	not asked
Place	1	North pole, Iceland, Alaska
	2	in the mountains, in winter, Santa's place Lake Tahoe
	3	Newcastle, Scotland
	4	long way away
	d	don't know/no response
	n	not asked
Inhabitants	1	polar bear
	2	bears, wolves
	3	fish, whales, dolphins, seals
	4	people [a) Eskimos b) like us]
	5	Santa Claus
	6	lions, parrots
	7	none
	d	don't know/no response
	n	not asked
Polar bear	1	polar bear
	2	bear, teddy bear, panda bear
	3	white animal
	d	don't know/no response
	n	not asked
Penguin	1	penguin
	2	pingu
	3	bird
	d	don't know/no response
	n	not asked
Knowledge source	1	parents, family
	2	TV/Video/computer
	3	books
	4	zoo/holiday
	5	school
	6	other
	7	"I just know"
	d	don't know/no response
	n	not asked
Warming	1	"melt" meaning change to water
	2	"melt" meaning something else
	3	change to grass/ground
	4	go away up to the sky/to the clouds
	5	go somewhere else e g in water /disappear
	6	it gets warm, it doesn't change (incorrect)
	7	change e g colour
	8	other e g fall down, cracks
	(9	snow changes to ice for 6-year-olds)
	d	don't know/no response
	n	not asked
Effects	1	fall in the water/walk on ground (immediate)
	2	won't have any homes/nowhere to live/won't like it
	3	will live in caves, will get hot (6 for 6-year-olds)
	4	they will die (3 for 6-year-olds)
	5	go somewhere else (4 for 6-year-olds)
	6	they will have no food and die (causal link) (5 for 6-year-olds)
	7	other
	d	don't know/no response
	n	not asked
Knowledge source	1	parents, family
	2	TV/Video/computer
	3	books
	4	travel/holiday/zoo/personal experience

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                       5  school
                       6  other
                       7  "I just know"
                       d  don't know/no response
                       n  not asked


Rubbish
Observations          1  litter, rubbish, trash, paper, trees, car (correct)
                      2
                      d  don't know/no response
                      n  not asked
Where?                1  in the bin/garbage/trash can
                      2  other
                      d  don't know/no response
                      n  not asked
What happens to rubbish?      1  bin/garbage-men
                              2  bin/garbage-lorry
                              3  tip/dump
                              4  other
                              d  don't know/no response
                              n  not asked
All rubbish in same bin?      1  no, recycled
                              2  no, but not sure why
                              3  all in same bin
                              d  don't know/no response
                              n  not asked
Things recycled   1  all rubbish
                  2  bottles
                  3  cans
                  4  newspapers
                  5  others
                  6  incorrect e g  food
                  7  nothing
                  d  don't know/no response
                  n  not asked
"Recycled"  1  used again through changing form (correct)
            2  used again - broken/torn just stuck together
            3  used again in same form
            4  'made new again'
            5  thrown away
            6  other
            d  don't know/no response
            n  not asked
Knowledge source  1  parents, family
                  2  TV/Video/computer
                  3  books
                  4  observation e g  I've seen it
                  5  school
                  6  other
                  7  "I just know"
                  d  don't know/no response
                  n  not asked
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